

DIELECTRIC CERAMIC MATERIAL AND METHOD FOR  
PRODUCING THE SAME

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ABSTRACT OF THE DISCLOSURE

10 An object of the present invention is to make it possible to sinter a PZT dielectric ceramic material at a desired low temperature and to prevent deterioration of the performance of the base material.

15 According to the present invention, an auxiliary oxide is used that is made by adding the oxide of at least one of tungsten and molybdenum to lead oxide in the following proportions.

$$\text{PbO } x + (\text{WO}_3 \text{ } y + \text{MoO}_3 \text{ } z)$$
  
where  $x + y + z = 1$ ,  $0.005 < y + z < 0.4$  and  $y, z \geq 0$ .  
0.5 mol % to 20 mol % of this auxiliary oxide is added to  
20 a mixture of a stock material of dielectric ceramic material or calcination thereof that has a composition of  $\text{ABO}_3$  type dielectric ceramic material where 0.9 molar ratio or more lead is included in site A assuming the proportion of site B is 1, and the material is mixed,  
25 formed and sintered. The content of tungsten and molybdenum combined is less than 0.098 mole in proportion to 1 mole of lead and the density of the dielectric ceramic material after sintering is  $7.5 \text{ g/cm}^3$  or larger. The auxiliary oxide is dispersed in the calcined powder  
30 to form a liquid phase at a desired temperature, thereby to accelerate the sintering, thus making it possible to sinter at a lower temperature.